

IN THE CLAIMS:

1-34. (cancelled)

35. (currently amended) A prosthetic hearing device comprising:
a sensor for detecting a ~~linguistic sound~~speech;
a ~~sound~~speech recognition processor that performs ~~sound~~speech recognition
on the detected ~~linguistic sound~~speech;
a ~~sound~~speech information generator that analyzes results of ~~sound~~speech
recognition by the ~~sound~~ recognition processor to comprehend a semantic meaning in
the ~~linguistic sound~~detected speech and generates ~~sound~~ information in
~~which~~transforms the ~~linguistic sound~~ is transformed so as to ~~detected speech~~ into a
~~speech having a speech form~~ become assistive in understanding the semantic meaning
in the ~~detected speech~~; and
an output device that outputs the ~~generated speech~~sound information to a user.

36. (currently amended) A prosthetic hearing device of claim 35, wherein the ~~sound~~
speech recognition processor performs ~~sound~~speech recognition in view of at least one
of a physical state of the user, an operating condition of the prosthetic hearing device
and a purpose for use of the device by the user.

37. (currently amended) A prosthetic hearing device of claim 35, wherein the ~~sound~~
speech recognition processor performs at least one of speaker recognition, speaker
identification and speaker verification, and the ~~sound~~informationspeech generator
generates ~~sound~~ informationthe speech representing results of the recognition,
identification and/or verification.

38. (currently amended) A prosthetic hearing device of claim 35, wherein the ~~sound~~
informationspeech generator transforms the ~~linguistic sound~~detected speech in view of
at least one of a physical state of the user, an operating condition of the prosthetic
hearing device and a purpose for use of the device by the user.

39. (cancelled)

40. (currently amended) A prosthetic hearing device of claim 35, wherein the ~~sound information speech~~ generator transforms the ~~linguistic sound detected speech~~ by adding thereto a modifying language.

41. (currently amended) A prosthetic hearing device of claim 35, wherein the ~~sound information speech~~ generator reproduces ~~sound information speech~~ previously produced when it determines from ~~the results of the speech recognition by the sound recognition processor~~ that it is necessary to reproduce the previously produced ~~sound information speech~~.

42. (currently amended) A prosthetic hearing device of claim 35, further comprising an input device, wherein the ~~sound information speech~~ generator, when receiving a reproduction instruction through the input device from the user, reproduces ~~sound information the speech~~ previously produced.

43. (currently amended) A prosthetic hearing device of claim 35, wherein the ~~sound information speech data~~ generator controls an output rate of the ~~sound information speech data~~.

44. (currently amended) A prosthetic hearing device of claim 35, wherein the output device outputs the ~~sound information speech~~ using a ~~formant sample speech data synthesized by the sound information speech generator~~.

45. (currently amended) A prosthetic hearing device of claim 35, further comprising a memory that has stored ~~a library samples of formants speech data~~, wherein the output device outputs the ~~sound information speech data~~ using a ~~formant sample speech data selected by the sound information speech data generator from the library memory~~.

46. (cancelled)

47. (currently amended) A prosthetic hearing device of claim 35, wherein the ~~sound information speech~~ generator generates the ~~sound information speech~~ abridging a content of that summarizes the ~~linguistic sound detected speech~~.

48. (currently amended) A prosthetic hearing device of claim 35, further comprising a display, wherein the ~~sound information speech~~ generator displays on the display an image associated with the semantic meaning in the ~~linguistic sound detected speech~~.

49. (currently amended) A prosthetic hearing device of claim 48, further comprising a memory that has stored a library of images comprising still and motion pictures, symbols, characters, notes, photos, animations, illustrations, voice spectrum patterns and colors, wherein the ~~sound information speech~~ generator selects and displays at least one image associated with the semantic meaning in the ~~linguistic sound detected speech~~.

50. (cancelled)

51. (currently amended) A prosthetic hearing device of claim 35, wherein the sensor selectively detects a ~~linguistic sound speech~~ from a specific ~~sound speech~~ source.

52. (cancelled)

53. (withdrawn) A prosthetic hearing device comprising:
a sensor that detects sound;
a sound recognition processor that performs sound recognition on the detected sound;
a sound information generator that generates sound information representing results of the sound recognition by the sound recognition processor; and
a surgically implanted output device that outputs the sound information to a user.

54. (withdrawn) A prosthetic hearing device of claim 53, wherein the output device is a middle ear implant.

55. (withdrawn) A prosthetic hearing device of claim 53, wherein the output device is an inner ear implant.

56. (withdrawn) A prosthetic hearing device of claim 53, wherein the output device is an auditory brainstem implant.

57. (withdrawn) A prosthetic hearing device of claim 53, wherein the output device is a cochlear implant.

58. (withdrawn) A prosthetic hearing device of claim 53, wherein the sound recognition processor performs sound recognition in view of at least one of a physical state of the user, an operating condition of the prosthetic hearing device and a purpose for use of the device by the user.

59. (withdrawn) A prosthetic hearing device of claim 53, wherein the sound recognition processor performs at least one of speaker recognition, speaker identification and speaker verification, and the sound information generator generates sound information representing results of the recognition, identification and/or verification.

60. (withdrawn) A prosthetic hearing device of claim 53, wherein the sound information generator generates the sound information in view of at least one of a physical state of the user, an operating condition of the prosthetic hearing device and a purpose for use of the device by the user.

61. (withdrawn) A prosthetic hearing device of claim 53, further comprising an input device, wherein the sound information generator, when receiving a reproduction

instruction through the input device from the user, reproduces sound information previously produced.

62. (withdrawn) A prosthetic hearing device of claim 53, wherein the sound information generator controls an output rate of the sound information.

63. (withdrawn) A prosthetic hearing device of claim 53, wherein the output device outputs the sound information using a formant synthesized by the sound information generator.

64. (withdrawn) A prosthetic hearing device of claim 53, further comprising a memory that has stored a library of formants, wherein the output device outputs the sound information using a formant selected by the sound information generator from the library.

65. (withdrawn) A prosthetic hearing device of claim 53, wherein the sound is a verbal speech, the sound recognition processor performs speech recognition on the speech, and the sound information generator analyzes results of speech recognition by the sound recognition processor to comprehend a semantic meaning in the speech and generates sound information in which the speech is transformed so as to become assistive in understanding of the semantic meaning.

66. (withdrawn) A prosthetic hearing device of claim 65, wherein the sound information generator transforms the speech into a speech of a syntactically different form.

67. (withdrawn) A prosthetic hearing device of claim 65, wherein the sound information generator transforms the speech by adding thereto a modifying language.

68. (withdrawn) A prosthetic hearing device of claim 65, wherein the sound information generator generates the sound information in languages different from a language of the speech.

69. (withdrawn) A prosthetic hearing device of claim 65, wherein the sound information generator generates the sound information abridging a content of the speech.

70. (withdrawn) A prosthetic hearing device of claim 65, wherein the sound information generator reproduces sound information previously produced when it determines from results of speech recognition by the sound recognition processor that it is necessary to reproduce the previously produced sound information.

71. (withdrawn) A prosthetic hearing device of claim 65, further comprising a display, wherein the sound information generator displays on the display an image associated with the semantic meaning in the speech, the image comprising at least one of a text image and a non-text image.

72. (withdrawn) A prosthetic hearing device of claim 71, further comprising a memory that has stored a library of images comprising still and motion pictures, symbols, characters, notes, photos, animations, illustrations, voice spectrum patterns and colors, wherein the sound information generator selects and displays at least one image associated with the semantic meaning in the speech.

73. (withdrawn) A prosthetic hearing device of claim 71, wherein the sound information generator translates the speech into a sign language representing the semantic meaning in the speech and displays the sign language.

74. (withdrawn) A prosthetic hearing device of claim 53, wherein the sound is non-linguistic sound, and the sound information generator analyzes results of sound recognition by the sound recognition processor to comprehend a meaning attached to

the non-linguistic sound and generates sound information assistive in understanding of the attached meaning.

75. (withdrawn) A prosthetic hearing device of claim 74, wherein the sound information represents the meaning attached to the non-linguistic sound.

76. (withdrawn) A prosthetic hearing device of claim 74, wherein the sound information represents a phonetic reproduction of the non-linguistic sound.

77. (withdrawn) A prosthetic hearing device of claim 74, further comprising a display, wherein the sound information generator displays on the display an image associated with the meaning attached to the non-linguistic sound, the image comprising at least one of a text image and a non-text image.

78. (withdrawn) A prosthetic hearing device of claim 77, wherein the displayed image represents the meaning attached to the non-linguistic sound.

79. (withdrawn) A prosthetic hearing device of claim 77, wherein the displayed image is a text image representing a phonetic reproduction of the non-linguistic sound.

80. (withdrawn) A prosthetic hearing device of claim 77, wherein the displayed image is a sign language representing the meaning attached to the non-linguistic sound.

81. (withdrawn) A prosthetic hearing device of claim 77, further comprising a memory that has stored a library of images comprising still and motion pictures, symbols, characters, notes, photos, animations, illustrations, sound spectrum patterns and colors, wherein the sound information generator selects and displays at least one images associated with the meaning attached to the non-linguistic sound.

82. (withdrawn) A prosthetic hearing device of claim 77, wherein the sound information generator changes the displayed image with a change in sound characteristics of the non-linguistic sound.

83. (withdrawn) A prosthetic hearing device comprising:

- a sensor that detects a speech;
- an output device that outputs detected speech;
- a speech recognition processor that performs speech recognition on the detected speech;
- a display information generator that analyzes results of speech recognition by the speech recognition processor to comprehend a semantic meaning in the speech and generates display information in which the speech is transformed into at least one of a text image and a non-text image that is assistive in understanding of the semantic meaning of the speech; and
- a display that displays the display information to a user.

84. (withdrawn) A prosthetic hearing device of claim 83, wherein the speech recognition processor performs speech recognition in view of at least one of a physical state of the user, a operating condition of the device and a purpose for use of the device by the user.

85. (withdrawn) A prosthetic hearing device of claim 83, wherein the speech recognition processor performs at least one of speaker recognition, speaker identification and speaker verification, and the display information generator generates display information representing results of the recognition, identification and/or verification.

86. (withdrawn) A prosthetic hearing device of claim 83, wherein the display information generator, when generating the display information, transforms the speech in view of at least one of a physical state of a user, an operating condition of the device and a purpose for use of the device by the user.

87. (withdrawn) A prosthetic hearing device of claim 83, wherein the display information generator, when generating the display information, transforms the detected speech into a speech of a syntactically different form.

88. (withdrawn) A prosthetic hearing device of claim 83, wherein the display information generator, when generating the display information, transforms the detected speech by adding thereto a modifying language.

89. (withdrawn) A prosthetic hearing device of claim 83, wherein the display information generator generates the display information in languages different from a language of the detected speech.

90. (withdrawn) A prosthetic hearing device of claim 83, wherein the display information generator generates the display information abridging a content of the detected speech.

91. (withdrawn) A prosthetic hearing device of claim 83, wherein the non-text image is associated with the semantic meaning in the detected speech.

92. (withdrawn) A prosthetic hearing device of claim 83, further comprising a memory that has stored a library of images comprising still and motion pictures, symbols, characters, notes, photos, animations, illustrations, voice spectrum patterns and colors.

93. (withdrawn) A prosthetic hearing device of claim 83, wherein the non-text image is a sign language representing the semantic meaning in the detected speech.

94. (withdrawn) An artificial larynx device comprising:
a sensor that detects a speech from a user;

a speech recognition processor that performs speech recognition on the detected speech;

a sound information generator that analyzes results of speech recognition by the speech recognition processor to comprehend a semantic meaning in the detected speech and generates sound information in which the detected speech is transformed so as to become assistive in understanding of the semantic meaning; and

an output device that outputs the sound information to a listener of the speech.

95. (withdrawn) An artificial Larynx device of claim 94, wherein the speech recognition processor performs speech recognition in view of at least one of a physical state of the user, an operating condition of the artificial larynx device and a purpose for use of the artificial larynx device by the user.

96. (withdrawn) An artificial Larynx device of claim 94, wherein the sound information generator transforms the detected speech in view of at least one of physical state of the listener, an operating conditions of the artificial larynx device and a purpose for use of the artificial larynx device by the user.

97. (withdrawn) An artificial Larynx device of claim 94, wherein the sound information generator transforms the detected speech into a speech of a syntactically different form.

98. (withdrawn) An artificial Larynx device of claim 94, wherein the sound information generator transforms the detected speech by adding thereto a modifying language.

99. (withdrawn) An artificial Larynx device of claim 94, wherein the sound information generator reproduces sound information previously produced when it determines from results of speech recognition by the sound recognition processor that it is necessary to reproduce the previously produced sound information.

100. (withdrawn) An artificial Larynx device of claim 94, further comprising an input device, wherein the sound information generator, when receiving a reproduction instruction through the input device, reproduces sound information previously produced.

101. (withdrawn) An artificial Larynx device of claim 94, wherein the sound information generator controls an output rate of the sound information.

102. (withdrawn) An artificial Larynx device of claim 94, wherein the sound information generator generates sound information in languages different from a language of the detected speech.

103. (withdrawn) An artificial Larynx device of claim 94, wherein the sound information generator generates sound information abridging a content of the detected speech.

104. (withdrawn) An information processing device comprising:
an input section that receives input data representing results of speech recognition performed on a speech;
an information generator that analyzes the results of speech recognition to comprehend a semantic meaning in the speech and generates sound information in which the speech is transformed so as to become assistive in understanding of the semantic meaning; and
an output section that outputs the sound information to a user.

105. (withdrawn) An information processing device of claim 104, wherein the information generator transforms the speech in view of at least one of a physical state of a user, an operating condition of the device and a purpose for use of the device by the user.

106. (withdrawn) An information processing device of claim 104, wherein the information generator transforms the speech into a speech of a syntactically different form.

107. (withdrawn) An information processing device of claim 104, wherein the information generator transforms the speech by adding thereto a modifying language.

108. (withdrawn) An information processing device of claim 104, wherein the information generator generates the sound information in languages different from a language of the speech.

109. (withdrawn) An information processing device of claim 104, wherein the information generator generates the sound information abridging a content of the speech.

110. (withdrawn) An information processing device of claim 104, wherein the information generator further generates display information representing an image associated with the semantic meaning in the speech, the image comprising at least one of a text image and a non-text image.

111. (withdrawn) An information processing device of claim 104, wherein the image is a sign language representing the semantic meaning in the speech.

112. (new) A prosthetic hearing device comprising:

 a sensor for detecting a speech;

 a speech recognition processor that performs speech recognition on the detected speech, wherein the speech recognition processor performs speech recognition in view of at least one of a physical state of the user, an operating condition of the prosthetic hearing device and a purpose for use of the device by the user;

 a speech generator that analyzes results of speech recognition to comprehend a semantic meaning in the detected speech and transforms the detected speech into a

speech having a speech form assistive in understanding the semantic meaning in the detected speech; and

an output device that outputs the generated speech to a user.

113. (new) A prosthetic hearing device comprising:

a sensor for detecting a speech;

a speech recognition processor that performs speech recognition on the detected speech;

a speech generator that analyzes results of speech recognition to comprehend a semantic meaning in the detected speech and transforms the detected speech into a speech having a speech form assistive in understanding the semantic meaning in the detected speech, wherein the speech generator transforms the detected speech in view of at least one of a physical state of the user, an operating condition of the prosthetic hearing device and a purpose for use of the device by the user; and

an output device that outputs the generated speech to a user.